

# Radio

## Fans Keep U. S. Radio Expert Busy

WASHINGTON, April 21.—Radio fans meet William D. Terrell, U. S. Navy's own radio expert.

His official title is chief radio inspector of the United States Department of Commerce. His headquarters are at Washington.

Since radio communication has become so regular and widespread, Terrell's office has been flooded with inquiries.

Many of his queries are answered directly by radio through the air.

Picture shows Terrell receiving a message.

## RADIO PRIMER

**CLOSED CIRCUIT**—The circuit of a radio set which includes the secondary coil, detector, condenser and telephone headset and makes a complete circuit in itself. It gets its current by induction from the primary of the open, or aerial circuit.

## Vacuum Tube Is Needed

By R. L. DUNCAN,  
Director, Radio Institute of America

Radio waves sent out by means of the charge and discharge of a condenser through a circuit containing an inductance are all right for code messages. But they will not transmit speech or music.

All transmitters broadcasting speech and music employ the vacuum tube to generate their output. The components of this vacuum tube—sometimes referred to as valves or audion tubes—are made of three elements: a tungsten filament, a copper or nickel grid and an aluminum or nickel plate placed in a highly vacuumed glass tube.

There are two taps taken from the filament—one from the plate and the other from the grid. These are drawn through the base of the tube and connected to small posts.

Current is supplied to the filament until it is brought to incandescence



WILLIAM D. TERRELL

the plate and filament currents form a common negative.

The grid is placed between the filament and the plate and acts as a controlling element of the electron currents between filament and plate. Since the plate in the tube has only a positive potential, the electrons thrown off by the filament are strongly attracted through the vacuum and an increased current will flow. This acts as an accelerator of the current.

By proper regulation of controlling device in a vacuum tube transmitting set, the tube is made a supreme producer of magnetic waves. To show its advantage over the system employing the charge and discharge of a condenser through an inductance as previously described, let us take two ships, one employing the vacuum tube and the other a spark gap.

This tube set, using only three-quarter kilowatts (150 volts), can transmit a message from the English coast to the Mediterranean port of Marseilles.

Everette R. Peacock, former president of the Milwaukee-Irving State bank, Chicago, is one of seven against whom the state's attorney says he will sue for embezzlement. The bank, officials charge, was looted of \$463,000. Peacock has issued a statement saying he knows nothing of the missing funds.

**GRAND DUCHESS ILL.**  
AMSTERDAM, April 21.—The grand duchess of Mecklenburg is seriously ill according to news today.

**GOOD HOUSEKEEPING FOR MAY**  
Has excellent article endorsing the KELVINATOR Electric Refrigerator. See it at Electric Service Co., 115-117 W. Colfax Ave.

**VACUUM TUBE. F. FILAMENT; G. GRID; P. PLATE.**

to the United States coast radio stations. A ship with the old system spark gap using five kilowatts (5000 watts) would be doing very well to cover 2500 miles.

This gain in the tube set is due wholly to the vacuum tube itself—with its multiplication of current within the tube—the increase due to the attraction of electrons thrown off the filament to the positively charged plate.

This is why the vacuum tube increases the incoming signal strength in a receiving set from 26 to 30 times over the receiving power of the crystal detector.

But he did not answer. She said, "Have you been thinking, in these weeks, while you've been coming on, what you are going to do?"

His hand, that had been crumpling up the sheet, were now laid flat before him. His eyes, that had been regarding her, were now averted from her, fixed ahead. "There is nothing I can do, in the way you mean."

She was silent a little time. "Marko, we've not talked at all about the greatest thing—of course they've told you—the Armistice, the war won, England, your England that you loved so, at peace, victorious; these dark years done, England, her own again. Your dear England, Marko."

He said, "It's no more to do with me. Frightful things have happened to me. Frightful things."

She went on, "There's your book—your 'England.' You have that to go to now. And all your plans—do you remember telling me all your plans? Such splendid plans. And first of all your 'England' that you loved writing so."

He said, "It can't be. It can't be." She began again to speak. He said, "I don't want to hear those things. They have nothing to do with me."

He then aroused himself and spoke and had a firmness in his voice. "And I'll tell you this," he said. "This was what I said I had to tell you. When you go, you are not to return. I don't want to see you again."

She drew a breath, steadying herself. "Why not, Marko?"

"Because what's been has been. Done, I've been through frightful things. They're on me still. They always will be on me. But from everything that belongs to them I want to get right away. And I'm going to."

"What are you going to do?"

"I don't know. Only get right away."

She got up. "Very well. I understand." She turned away. "It grieves me, Marko. But I understand. I've always understood you."

She turned again and came close to him. "That's what you're going to do. Do you know what I'm going to do?"

He shook his head. He was breathing deeply.

"I'm going to do what I ought to have done the minute I came into the room. I hadn't quite the courage. This."

She suddenly stooped over him. She encircled him with her arms and slightly raised him to her. She put her lips to his and kissed him and held him so.

"You are never going to leave me, Marko. Never, never, never, till death."

He cried, "Beloved, Beloved," and clung to her. "Beloved, Beloved," and clung to her.

THE END.

**PRESIDENT'S CHARIOT TO BE STAGE COACH**  
SEATTLE, April 21.—Coaches between Seattle and North Bend, fifty miles east of here, will soon have the privilege of riding in an automobile which, less than two years ago, was the private car of Woodrow Wilson while he was President of the United States.

The ex-presidential chariot, a 1915 model, was recently purchased by Emil Arneson and William Cochran, operators of a stage line, and is being fitted up for the North Bend run.

The chassis will be lengthened to 21 feet, the machine fitted with leather-upholstered seats sufficient to carry 21 passengers, a smoking compartment with silver ash trays, and a compartment for women installed.

**HATFIELD FALLS DEAD.**  
WILLIAMSON, W. Va., April 21.—John Hatfield, eldest son of the famous feudist, "Devil Anse" Hatfield, died of heart disease last night. He was riding muleback over the mountain, got off to light his lantern and then fell dead.

When you say cigars—say Dutch Masters 111-112

## In Bank Fraud



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## FIND GIRL SLAIN; MAN CONFESSES TO DEATH GUILT

Brutal Murder in Chicago  
Solved in Few Hours  
After Discovery.

"CHICAGO, April 21.—Thomas Roach, 27, today confessed to the brutal murder of an unidentified blonde whose nude body was found in a moving van on the South Side here, according to William O'Connor, police lieutenant.

Roach, according to O'Connor, met the girl and took her to his apartment.

"We quarreled," Roach was reported to have said. "I took a gun and beat her with it. I saw she was dead, so I carried her out and placed her body in a moving van."

Two school boys, playing about the lot, found the body.

The first theory of the police was that the woman had been slain in some nearby apartment building and her body moved to the moving van.

A trail, as if a body had been dragged, and the imprints of a man's shoes, gave strength to this theory.

According to the police the body apparently was that of a woman of seeming refinement and prosperity. The body was lying on its side with the face twisted downward.

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## REMOVAL SALE

I Have Leased the Entire 2nd Floor at

230 South Michigan Street

PAXON BLDG.

I will have the Best Modern Equipped

Salesrooms, and my own Work Shops.

Watch Announcement

FOR MY NEW BIG IDEA

SPECIAL PRICES

During My Moving Sale

SUITS

Made the Custom Way

\$35

EXTRA PANTS

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Order Your Clothes Now.

Better Values, Better Workmanship

AT POPULAR PRICES

The Best Clothing Values in South Bend

Matt Golden

THE TAILOR

220 S. Michigan St.

Manhattan

Shirts of

White

Oxford—

Most white oxfords shrink; these won't; they're

Manhattans, and that's why we

sell so many. Made with

collar attached; plain or

buttoned down. Very good

looking and worn at the office,

school, for golf as well as

dress.

They're ..... \$3

Sam'l Spiro & Co.

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## CHARLES B. SAX & COMPANY

Where You Find Value, Not Only in Price But in Quality

## Correct Wearing Apparel

You'll be just as delighted with the quality and style of these garments as you are with the low prices.

With the first bright days of Spring comes the promise of sunnier days,—days when you will want to have the prettiest of wear, and it is here for you in Spring's new favorite fashions. Lower prices make purchasing a pleasure.



## High Grade Spring Suits In a Special Sale

These suits will gratify any whim more fully than you can imagine! They are undoubtedly more unusual, and more lovely than any spring suits before them. They are the styles that are so good this spring! They are original and feminine and altogether delightful. Braid, trimmed and embroidered in black and colors. Poiret Twill, Serge and Tricotine are the materials! In navy blue and black.

## Note These Sale Prices!

\$49.50 Suits Reduced to	.....\$37.13
\$55.00 Suits Reduced to	.....\$41.25
\$59.50 Suits Reduced to	.....\$44.63
\$65.00 Suits Reduced to	.....\$48.78
\$75.00 Suits Reduced to	.....\$56.25

## A Real Opportunity Coats - Capes - Wraps

\$